DIVISION OF ENVIRONMENT
QUALITY MANAGEMENT PLAN

PART III:

STATE COOPERATIVE PROGRAM
QUALITY ASSURANCE MANAGEMENT PLAN

Revision 1
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Kansas Department of Health and Environment
Division of Environment
Bureau of Environmental Remediation
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Concurrences and Approvals

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* Refer to State Cooperative Program for the Bureau's Standard Operating Procedures (SOPs) used in this Program Plan.

Section 1

INTRODUCTION

1.1 Purpose of Plan

This document presents the quality assurance management plan for the State Cooperative Program. The plan describes the mission, developmental history, organizational structure, environmental monitoring protocols, data handling procedures, and quality assurance (QA) and quality control (QC) requirements of this program. Standard operating procedures (SOPs) and equipment used in the program are presented in Appendix A.

1.2 Plan Revisions

To be effective and useable, this document must be maintained in an up-to-date condition. As required by the Division of Environment Quality Management Plan (Part I, section 7), the contents of the plan are reviewed on at least an annual basis. Minor changes in the report's organizational structure or terminology may be approved by the Section Chief. However, major revisions which substantially change the contents of the document, especially in terms of QA policies or procedures, require the added approval of the Section Chief, Bureau QA Representative and the Bureau Director.

Section 2

DESCRIPTION OF PROGRAM

2.1 Historical Overview

The State Cooperative Unit is responsible for the development and administration of the State Cooperative Program. The State Cooperative Program was developed by the Bureau of Environmental Remediation/Remedial Section in 1990/1991 based on K.S.A. 65-3452 et. seq. to investigate environmental contamination, identify human health and environmental risks, evaluate potential remedial actions and to implement and monitor selected remedies. The program encourages public participation throughout the process including public input during the remedy selection process. The program is structured similar to the federal National Contingency Plan (NCP) Superfund program; however, the State Cooperative Program cannot be employed at Superfund sites or non-Superfund sites where the potentially responsible parties (PRPs) desire to follow the NCP.

2.2 Missions and Goals

The State Cooperative Program was developed as an alternative to Superfund to be administered at the state level to address both NPL-caliber and non-NPL caliber contaminated sites. The State Cooperative Program was conceived to provide flexibility, as appropriate, to facilitate the investigation and remediation of a wide universe of sites. The primary mission is to protect human health and the environment as established by federal and state statutes, regulations and policies. All investigations are conducted through Consent Orders or Administrative Orders with Potentially Responsible Parties (PRPs). Each legal agreement contains a site-specific scope of work that includes one or a combination of the following:

- preliminary investigation (PI);
- comprehensive investigation (CI);
- baseline risk assessment (optional);
- corrective action study (CAS);
- corrective action plan (CAP);
- interim remedial measures (IRM);
- corrective action (CA); or
- site reclassification.

The goals of the State Cooperative Program are defined as follows:

- to protect human health and the environment by enforcing appropriate federal, state and local laws, including protection of human health as defined by CERCLA;

- to provide a systematic, consistent procedures for PRPs and their consultants to investigate and remediate state-lead contaminated sites in Kansas;

- to ensure public involvement and/or awareness at all levels throughout the State Cooperative Program process, tailoring that public involvement to the level of interest expressed by the local community

- to develop and employ standardized Consent Orders to facilitate streamlined negotiations providing relatively consistent legal documents for the various scopes of work to be performed throughout the State Cooperative Program process;

- to provide technical oversight of the investigation and remediation of contaminated sites that meet federal and state quality assurance/quality control protocols; and

- to effectively communicate with EPA and the public regarding the status of all sites within the State Cooperative Program.

2.3 Organization and Responsibilities

ORGANIZATIONAL CHART

(See Exhibit 1 in the BER QA Plan Part II)

The Bureau Manager's responsibilities are defined in Part II of the Bureau Quality Assurance Plan. The Remedial Section Chief is responsible for supervising the Unit Leader of the State Cooperative Unit who manages the day-to-day operations of the State Cooperative Program. The Bureau Manager and Remedial Section Chief will become involved with the State Cooperative Program on an as-needed basis which may consist of strategic planning, policy development and implementation, and matters related to community participation, etc. The development and implementation of uniform policies and procedures for the State Cooperative Program is the responsibility of the Section Chief. The Section Chief and the Unit Leader are responsible for planning, organizing, supervising and directing the statewide activities of the State Cooperative Program. Additionally, the Section Chief is responsible for coordination between the units within the Remedial Section.

The Unit Leader is the State Cooperative Program manager who is responsible for ensuring that the Quality Assurance Management Plan and SOPs are implemented and adhered to in a consistent manner. Working with the program staff, the Unit Leader oversees staff activities to ensure reliability of environmental data collected within the State Cooperative Program reflect the mission and goals of the Quality Management Plan.

Staff provide technical oversight of all environmental investigations performed relative to the State Cooperative Program. State Cooperative Program remedial project managers are responsible for many of the following functions:

- review and evaluate geologic and/or hydrogeologic investigation work plans and reports for completeness, accuracy and technical adequacy;

- assess and identify potential human and/or environmental receptors that may be at risk requiring immediate or long-term remedial action(s);

- provide technical commentary to allow for corrective measures of identified omissions, deficiencies or errors in draft and final work plans and reports;

- evaluate and recommend to the public potential remedies to address remedial action objectives at contaminated sites;

- evaluate performance evaluation monitoring data to evaluate the effectiveness of the implemented remedy and to determine if further or alternative remedial methods would meet site-specific remedial action objectives in a reasonable time frame;

- collect split, duplicate, or other quality control environmental samples to ensure the representativeness, precision and accuracy of environmental data collected at sites throughout the investigative and remedial process; and

- represents the Agency at public meetings and other forums to present information regarding program activities.

Section 3

QUALITY ASSURANCE POLICY STATEMENT

The primary responsibility of project managers within the State Cooperative Program is to provide technical oversight to ensure that quality assurance/quality control measures and goals are achieved. State Cooperative Program project managers review, comment and approve work plans and reports for investigative and remedial activities conducted by Potential Responsible Parties (PRPs) through their environmental contractor. A provision within each Consent Order is the submission of draft and final Quality Assurance Project Plans and Field Sampling Plans, which together, comprises the Sampling and Analyses Plan. These plans are reviewed by State Cooperative Program project managers to determine their ability to achieve quality assurance/quality control requirement established and documented in the KDHE Quality Management Plan.

Project mangers and/or designated qualified staff routinely inspect field activities to ensure field activities are performed in conformance with the KDHE approved Quality Assurance Project Plan and Field and Sampling Plan. These oversight activities routinely include the collection of split, duplicate, or collocated environmental samples to ensure the representativeness, precision and accuracy of the various samples collected at a site throughout the investigation. All sampling activities conducted by State Cooperative Program project managers or designated technicians comply with the following goals:

- The purpose and objective of each environmental investigation shall be documented and approved by KDHE prior to field mobilization and initiating data collection activities. This purpose, objective and associated field methodologies shall be submitted in the form of a work plan, which must be reviewed by the project manager. It is the project managers' responsibility to ensure the proposed activities are compliant with KDHE's Quality Management Plan and for the intended use of the data. This process will facilitate effective communication from the PRP/environmental consultant and KDHE and will enhance the probability of meeting the stated objectives.

- Sample collection methodologies, field and/or laboratory analyses, and data management/validation activities shall be subjected to monitoring and periodic detailed evaluation by Kansas Health and Environmental Laboratory lab certification staff to evaluate the data and identify data validation issues, and to recommend potential corrective action measures to cure the deficiencies. When necessary, data will be qualified to a lesser degree of confidence and shall be limited in its use, as appropriate.

- All data collection activities will be accomplished and documented in accordance with a Divisional QA plan and applicable Standard Operating Procedures (SOPs), included in Appendix A.

Section 4

QUALITY ASSURANCE CRITERIA AND PROCEDURES

4.1 Sampling Types

Program staff collecting quality assurance/quality control environmental samples adhere to the sample collection procedures specified in the KDHE-approved site-specific Quality Assurance Project Plan (QAPP) and Field Sampling Plan (FSP). KDHE's approval of the site-specific plans are dependent upon the plans perceived compliance with field methods and sampling procedures provided in the "Compendium of Superfund Field Operations Methods", which is a compilation of demonstrated field techniques that have been used during remedial response activities at hazardous waste sites (U.S. EPA, September 1987), Standard Operating Procedures (SOPs) contained within the KDHE Quality Management Plan, and the site-specific QAPPs and FSPs. The purpose of the QAPP and FSP is to ensure that data generated from sample collection activities will be compliant with quality assurance goals such as representative, completeness, precision, accuracy, etc.

4.2 Requesting Analytical Services

Environmental samples collected by State Cooperative Program staff are frequently submitted to the Kansas Health and Environmental Laboratory (KHEL) or to KDHE-certified contract laboratories.

Each laboratory must adhere to the appropriate EPA laboratory method protocols. Samples are submitted to the laboratory following appropriate chain-of-custody documentation and preservation. Each contract laboratory must submit their Quality Assurance Project Plan prior to consideration for state contract. In addition to reporting the results of the environmental samples submitted, the laboratory must submit the appropriate laboratory method batch quality assurance/quality control outcomes including, among others, surrogate recovery, matrix spike recovery, laboratory blanks, and other appropriate analyses, which are site-specific such as trip blanks, equipment rinsate blanks, duplicates, inter-laboratory duplicates, etc. Lastly, the data must be reported with the appropriate lab qualifiers, if any, and signed by the laboratory technician or lab manager.

4.3 Data Validation and Reporting

All work plans submitted in association with the State Cooperative Program require a data management system including field logs, sample collection and management procedures, chain-of-custody and QA/QC samples collection protocols. This information is compiled and compared to the laboratory analytical data, including QA/QC sample data, as appropriate. The data evaluation/validation is reported and submitted to KDHE State Cooperative Program staff for review. Project managers review all the information and data to determine whether data quality objectives such as completeness, representativeness, precision, accuracy, and comparability were within defined threshold tolerances. Periodically, data validation reports are submitted to KHEL environmental laboratory certification staff for a focused review. This decision is typically predicated upon the priority of the site and potential suspicions of data that requires expert evaluation.

The data is then confirmed or refuted for the intended purpose of the data (e.g., level III or IV data for use in performing baseline risk assessments).

For each measurement, the data reduction scheme, including all equations used to calculate the concentration or value of the measured parameter, should be described. The principal criteria employed to validate the integrity of the data during collection and reporting should be referenced. All data collected should be validated at the appropriate field or laboratory quality control level to ascertain whether they are appropriate for the intended use. All task management and quality controls implemented shall be documented within the appropriate report appendix.

4.4 Procedures for Assessing Data Accuracy, Precision, Completeness, Representativeness and Comparibility

The quality characteristics of data generated by sampling, monitoring, or analysis, is defined in the following terms:

4.4.1 Accuracy: The degree of agreement of a measurement, or an average of measurements of the same thing, X, with an accepted reference or true value, T, usually expressed as the difference between the two values, X - T, or the differences as a percentage of the reference or true value, 100 (X - T)/T, and sometimes expressed as a ratio, X/T. Accuracy is a measure of the bias inherent in the measurement system.

4.4.2 Precision: A measure of mutual agreement among individual measurements of the same property, usually under prescribed similar conditions. Precision is best expressed in terms of the standard deviation. Various measures of precision exist depending on the prescribed similar conditions.

4.4.3 Completeness: A measure of the amount of the valid data obtained from a measurement system, compared with the amount that was expected to be obtained under correct normal conditions, and that was needed to be obtained in meeting the project data quality objectives.

4.4.4 Representativeness: The degree to which data accurately and precisely represent a characteristic of population, the parameter variations at a sampling point, a process condition, or an environmental condition. It also includes how well the sampling point represents the actual parameter variations that are under study.

4.4.5 Comparability: The confidence with which one data set can be compared with another; a qualitative characteristic that must be assured in terms of sampling, analysis, reporting, etc.

4.5 Quality Assurance Reporting Requirements

All reports or deliverables submitted through the State Cooperative Program require a quality assurance/quality control status summary of the project and any conditions adverse to the quality. The report should contain an assessment of measurement data accuracy, precision and completeness, results of any performance audits, results of system audits, any reported non-conformance, and any quality assurance problems, together with recommended solutions or corrective actions.

State Cooperative Program staff performing field work are subject to audits conducted by the Agency's designated QA/QC officer. A minimum number of field audits are performed on a quarterly basis and reported to the Program Manager and the Remedial Section Chief. All field audits are reviewed by the project manager, Program Manager and Remedial Section Chief to confirm that staff are adhering to the site-specific Quality Assurance Project Plan, Field Sampling Plan or Agency Quality Management Plan, as appropriate.

4.6 Corrective Action Procedures

In the context of quality assurance (QA), State Cooperative Program corrective actions are procedures that may be implemented on environmental samples that do not meet predetermined QA specifications or tolerances. In general, the corrective action procedures program addresses the analysis of any cause precipitating a negative audit finding and identifies the appropriate corrective action(s) necessary to address it. Program staff, or the appropriate quality assurance/quality control program designee, are responsible for reviewing data validation reports, audit reports and nonconformance reports, to identify significant or repetitious conditions adverse to quality, or deficiencies regarding the implementation or adherence to required quality assurance practices. In addition, the program staff, or QA/QC designee, is required to investigate the source(s) of the problem and is responsible for defining and/or implementing the necessary actions to remedy the problem.

REFERENCES

"EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations"; EPA QA/R-5, October 1998.

"A Compendium of Superfund Field Operations Methods"; EPA/540/P-87/001, December 1987.

"Data Quality Objectives for Remedial Response Activities"; EPA/540/G-87/003, March 1987.

"Guidance for Data Usability in Risk Assessment"; EPA/540/G-90/008, October 1990.

"Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA"; EPA/540/G-89/004, October 1988.

"Risk Assessment Guidance for Superfund"; EPA/540/1-89/002, December 1989.